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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/783,000

02/14/2001

Heinz Lindenmeier

LINDENMEIER ET
AL-18

1924

7590

04/21/2004

COLLARD & ROE, P.C.
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EXAMINER

JACKSON, BLANE J

ART UNIT

PAPER NUMBER

2685

DATE MAILED: 04/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/783,000

Applicant(s)

LINDENMEIER ET AL.

Examiner

Blane J Jackson

Art Unit

2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-20, 26, 27 is/are allowed.
- 6) ☒ Claim(s) 21, 23-25 is/are rejected.
- 7) ☒ Claim(s) 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see pages 21 and 22 regarding the Heiter reference, filed 28 January 2004, with respect to claim 1 has been fully considered and are persuasive. The rejection of claim 1 has been withdrawn.

The rejection of claim 2 under 35 U.S.C. 112 first paragraph is withdrawn with respect to the amendment to the specification regarding the "impedance elements".

Applicant's arguments see pages 26-28 regarding secondary reference Miyoshi, filed 28, January 2004, with respect to the rejection(s) of claim(s) 21-25 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Gottfried et al. (U.S. Patent 5,603,107).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 21 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gurak (U.S. Patent 3,593,147) with a view to Gottfried et al. (U.S. Patent 5,603,107).

As to claims 21, 23 and 24, Gurak teaches a space diversity system for receiving frequency-modulated (FM) radio signals having a multi antenna system producing at least two antenna output signals (column 2, lines 1-10) including:

A means for shifting the phase of at least one antenna output signal and summing the appropriately phased antenna output signals resulting in an added up signal (figure 2, two antenna output signals (29) and (30), combiner (14) to add the two signal paths (fa) and (fb), column 3, lines 30-75, column 4, lines 36-40).

Gurak does not teach antenna switches coupled to antennas and a detector for detecting reception disturbances in the added up signal and actuating the antenna switches in response to a reception disturbance so as to select such a switching position in which the output signal for the FM receiver is free of interference.

Gottfried teaches a FM receiver that includes a diversity antenna system that actuates antenna switches in response to a reception disturbance so as to select such a switching position in which the output signal for the FM receiver is free of interference (figures 1a and 1b, column 4, lines 40-65). Gottfried also teaches detector circuits for detecting reception disturbances in the form of average received signal level strength or average distortion level to determine antenna selection (column 5, line 60 to column 6, one 24). Since Gurak teaches an FM receiver that alternatively uses a space antenna diversity system, it would have been obvious to one of ordinary skill in the art at the time of the invention to enhance the antenna portion of the diversity system of Gurak with the diversity antenna selection methods of Gottfried to improve FM reception.

As to claim 25, Gurak teaches an antenna diversity system where the means for shifting the phase of at least one antenna output signal (figure 2, (Fa) or (Fb)) comprises a phase control means to adjust the phase of means for shifting the phase for a maximum signal to interference ratio in the added up signal (column 4, lines 5-26, phase control to ensure in-phase combining in combiner (14) - which achieves maximum signal).

Allowable Subject Matter

4. Claim 22 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Claims 1-20, 26 and 27 are allowed. The following is an examiner's statement of reasons for allowance:

As to claims 1 and 26, the prior art made of record fails to teach an antenna diversity method and system for receiving frequency-modulated radio signals in an FM receiver with the phase controlled summation of antenna signals for motor vehicles having a multi antenna system with antenna switches coupled to antennas for producing at least two antenna output signals including a phase controller having its input coupled to the output signal of the summation circuit and having a low pass filter to limit its speed of shifting of the phase shifter so that no audible disturbing frequency swing can occur within the operating range of the phase controller.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blane J Jackson whose telephone number is (703) 305-5291. The examiner can normally be reached on Monday through Friday, 8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (703) 305-4385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BJJ

Quochien B. Vuong 4/19/04

**QUOCHIEN B. VUONG
PRIMARY EXAMINER**